**SPECIFICATION OVERVIEW**

**AQA KS3 SCIENCE**



**SUBJECT CONTENT**

1. Forces

1.1 Speed

*Investigate variables that affect the speed of a toy car rolling down a slope*

1.2 Gravity

*Explain the way in which an astronaut’s weight varies on a journey to the moon*

1.3 Contact forces

*Investigate factors that affect the size of frictional or drag forces*

1.4 Pressure

*Investigate how pressure from your foot onto the ground varies with different footwear*

2. Electromagnets

2.1 Voltage and resistance

*Compare the voltage drop across resistors connected in series in a circuit*

2.2 Current

*Compare and explain current flow in different parts of a parallel circuit*

2.3 Electromagnets

*Investigate ways of varying strength of an electromagnet*

2.4 Magnetism

*Explore the magnetic field pattern around different types or combinations of magnets*

3. Energy

3.1 Energy costs

*Compare the running costs of fluorescent and filament light bulbs*

3.2 Energy transfer

*Explain the energy transfers in a hand-crank torch*

3.3 Work

*Explain how an electric motor raising a weight is doing work*

3.4 Heating and cooling

*Investigate how to prevent heat loss by conduction, convection and radiation*

4. Waves

4.1 Sound

*Relate changes in the shape of an oscilloscope trace to changes in pitch and volume*

4.2 Light

*Use ray diagrams to model how light passes through lenses and transparent materials*

4.3 Wave effects

*Relate the impact of different types of waves on living cells to their frequency and the*

*energy carried by the wave*

4.4 Wave properties

*Use the wave model to explain observations of the reflection, absorption and transmission of waves*

5. Matter

5.1 Particle model

*Relate the features of the particle model to the properties of materials in different states*

5.2 Separating mixtures

*Devise ways to separate mixtures, based on their properties*

5.3 Periodic table

*Sort elements using chemical data and relate this to their position in the periodic table*

5.4 Elements

*Compare the properties of elements with the properties of a compound formed from them*

6. Reactions

6.1 Metals and non-metals

*Use experimental results to suggest an order of reactivity of various metals*

6.2 Acids and alkalis

*Devise an enquiry to compare how well indigestion remedies work*

6.3 Chemical energy

*Investigate a phenomenon that relies on an exothermic or endothermic reaction*

6.4 Types of reaction

*Investigate changes in mass for chemical and physical processes*

7. Earth

7.1 Earth structure

*Model the processes that are responsible for rock formation and link these to the rock*

*features*

7.2 Universe

*Relate observations of changing day length to an appropriate model of the solar system*

7.3 Climate

*Investigate the contribution that natural and human chemical processes make to our carbon dioxide emissions*

7.4 Earth resources

*Predict the method used for extracting metal based on its position in the reactivity series*

8. Organisms

8.1 Movement

*Explore how the skeletal system and muscular system in a chicken wing work together to cause movement*

8.2 Cells

*Identify the principal features of a cheek cell and describe their functions*

8.3 Breathing

*Investigate a claim linking height to lung volume*

8.4 Digestion

*Evaluate how well a model represents key features of the digestive system*

9. Ecosystems

9.1 Interdependence

*Use a model to investigate the impact of changes in a population of one organism on others in the ecosystem*

9.2 Plant reproduction

*Use models to evaluate the features of various types of seed dispersal*

9.3 Respiration

*Use data from investigating fermentation with yeast to explore respiration*

9.4 Photosynthesis

*Use lab tests on variegated leaves to show that chlorophyll is essential for photosynthesis*

10. Genes

3.10.1 Variation

*Graph data relating to variation and explain how it may lead to the survival of a species*

10.2 Human reproduction

*Relate advice to pregnant women to ideas about transfer of substances to the embryo*

10.3 Evolution

*Review the evidence for theories about how a particular species went extinct*

10.4 Inheritance

*Model the inheritance of a specific trait and explore the variation in the offspring produced*